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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/701,584	02/01/01	RDS10	A P66095US0

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HM22/0509

EXAMINER

GHASHGHAEI, F

ART UNIT

PAPER NUMBER

1656

DATE MAILED:

05/09/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Offic Action Summary</b>	Application No.	Applicant(s)
	09/701,584	BOSIO ET AL.
	Examiner Fariba Ghashghaei	Art Unit 1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

- 1) Certified copies of the priority documents have been received.
- 2) Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- 3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

15) Notice of References Cited (PTO-892)

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

18) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

19) Notice of Informal Patent Application (PTO-152)

20) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Chrisey et al.(US Pat. No. 5,688,642).

Chrisey discloses a support comprising oligonucleotides or polynucleotides covalently linked at their 5'- or 3'-termini to at least one major surface of said support through bifunctional spacers and bifunctional linkers, characterized in that said oligonucleotides or polynucleotides covalently linked at their 5'- or 3'-termini through bifunctional spacers and bifunctional linkers which have a length of from 4 to about 400 bases.(See Abstract, Figures 1-6,column 3, lines 20-60 and claims).

### ***Claim Rejections –35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guo et al, ("Direct Fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports", Nucleic Acid Research, Vol. 22, No. 24, 1994, 5456-5465) and in view of Mark Schena ("Genome analysis with gene expression microarrays", Bioassays, Vol.18, No.5, 1996,427-431) and Chrisey et al.(US Pat. No. 5,688,642).

Guo et al. teaches the analysis of genetic polymorphisms by using oligonucleotide samples immobilized on a solid surface of glass, and the fluorescence detection method wherein the fluorescently tagged strand is hybridized to the support-bound oligonucleotide array, and the hybridization pattern is detected by fluorescence scanning (See Abstract, Figure 1, and page 5458, column 2, last paragraph). Guo also describes that the immobilization is achieved by using 3-aminopropyl trimethoxysilane and 1,4-phenylene diisothiocyanate and the immobilized DNA oligomer is 15 bp long and is bonded to the isothiocyanate group by a dT spacer with 15 nucleotides and  $(CH_2)_6$  for hybridization. The polynucleotides to be analysed are marked with fluorescence.

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Guo does not teach that the immobilized nucleic acids are between 200 and 600 bp long.

Schena teaches the use of microarrays in determining gene expression. Schena describes that the immobilized polynucleotides are cDNAs which code for a whole gene and the length of the cDNAs varies considerably, for example, as applicants show, there are cDNAs which are 200 bp long (See columns 1-3, and page 430).

Chrisey discloses that the immobilization of nucleic acids up to 400 bp long is entirely within the routine scope of the art (See claim 13).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to combine the hybridization of oligonucleotide arrays on glass supports taught by Guo with results of teaching of Schena to make the claimed invention.

The person of ordinary skill in the art would have been motivated to make these oligonucleotide arrays on solid support because Schena teaches that the length of cDNAs could be different and Chrisey disclosed that the immobilization of nucleic acids up to 400 bp long is entirely within the routine scope of the art (See claim 13).

Claims 1-10 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fariba Ghashghaei whose telephone number is (703)305-3586. The examiner can normally be reached on 8:30 AM-4:30PM on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (703)308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3014 for regular communications and (703)305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0196.



Fariba Ghashghaee  
Examiner  
Art Unit 1656

May 6, 2001



W. Gary Jones  
Supervisory Patent Examiner  
Technology Center 1600

5/7/01